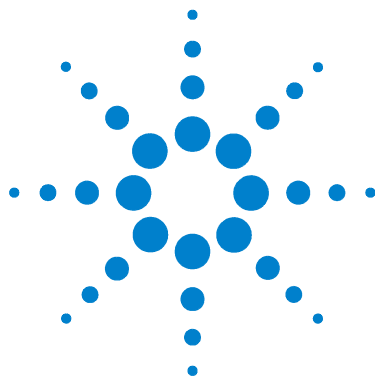




**Agilent G1732AA
MSD Security
ChemStation**

Installation Manual



Agilent Technologies

Notices

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Software Revision

This manual is valid for A.01.xx revisions of the Agilent G1732AA MSD Security ChemStation software, where xx refers to minor revisions of the software that do not affect the technical accuracy of this manual.

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In this manual...

This manual contains the information needed by a person experienced with Microsoft Windows operating systems to install the Agilent G1732AA MSD Security ChemStation software on a properly equipped personal computer.

1 General Information

This chapter presents the hardware and operating system requirements for the MSD Security ChemStation software.

2 Local Area Network Configuration

This chapter contains the information needed to set up the system using Local Area Network (LAN) communications.

3 Installing Agilent BootP Service

Some older GCs and MSDs require use of the BootP Service to supply LAN addresses. This chapter describes those situations and how to install and use the service.

4 GPIB Driver Installation

This chapter describes the processes for installing GPIB communications.

5 Installing MSD Security ChemStation Software

After communications have been set up, according to either Chapter 3 or Chapter 4, this chapter contains the procedure for installing the MSD Security ChemStation software.

6 Troubleshooting

This chapter describes diagnostic procedures for LAN network communications.

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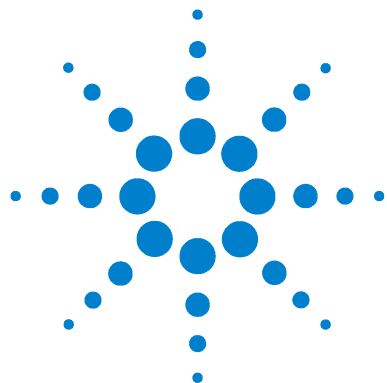
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This chapter describes hardware and software requirements for installation of the Agilent MSD Security ChemStation software.



Before You Begin

This manual contains instructions to install and configure the Agilent G1732AA MSD Security ChemStation software. Your service representative must finish installing your MSD hardware before you begin the software installation.

Installation of the MSD Security ChemStation includes these steps:

- 1 Verify minimum computer requirements before you start (this chapter).
- 2 Confirm that you have a correct operating system (this chapter).

OR

Install a correct operating system (this chapter).

- 3 Prepare Windows XP® Professional for software installation (this chapter).
- 4 Remove an existing MSD ChemStation installation (this chapter).
- 5 Configure the LAN network ([Chapter 2](#)). Applies to LAN-based instruments only: 5973 MSD systems and 6890N or upgraded 6890 GC's.

OR

Install and configure GPIB ([Chapter 4](#)). Applies to GPIB-based instruments only: 5973 MSD systems and 6890 GC's.

- 6 Install and configure the MSD Security ChemStation software ([Chapter 5](#))

Computer Requirements

The minimum requirements for operation of the MSD Security ChemStation software are:

- A Pentium® III computer with 450 MHz or higher processor clock speed recommended; Intel® Pentium®/Celeron™ family or compatible processor recommended
- Windows XP Professional with Service Pack 1 (or higher) or Windows 2000 Professional with Service Pack 4 (or higher)
- 128 MB of RAM or higher recommended
- 80 GB of hard disk space or higher recommended (40 GB minimum supported)
- Super VGA (1024 × 768) or higher resolution video adapter and color monitor
- All power-saving features of the BIOS disabled—see your PC manual
- All power-saving programs disabled—see your PC manual
- CD-ROM drive
- A sound card and speakers or headphones (optional)
- Keyboard and Microsoft mouse or compatible pointing device
- A data backup device (strongly recommended)
- Printer support
 - HP LaserJet 2200d or 2300 printers are fully tested/supported with the Post Script drivers.
 - HP LaserJet 4050 or 4100 printers, although not fully tested with this release, are supported due to prior testing. Supported drivers include PCL 5e and 6.
 - HP DeskJet printers are not tested/supported.
 - Network printers are not supported.
- PCI Network Interface Card for LAN-based systems
- GPIB Control Card, Agilent 82350B for GPIB-based systems

Operating System Requirements

The operating system must be either Windows® XP Professional (Service Pack 1 or higher), or Windows 2000 Professional (Service Pack 4 or higher). MSD Security ChemStation software is *not* supported on Windows XP Server, Windows 2000 Server, or Windows NT®.

Two situations may exist:

Case 1 The present operating system on your computer is anything *except* Microsoft® Windows XP Professional or Windows 2000 Professional.

Case 2 The operating system is correct but the Service Pack is either missing or outdated.

Customer responsibilities

CAUTION

If upgrading requires formatting the computer hard disk, this procedure will result in loss of all data on the hard disk. Be sure to back up the following files, as well as any other files you may need in the future.

- Methods and data
- Sequences
- Tune Files (*.U) and comma-separated value (*.CSV) files
- User-created libraries
- User macros

The computer BIOS may need to be updated for the new Windows operating system. Verify the BIOS version on your computer and check with the manufacturer of the PC for the correct BIOS for your new operating system.

Some software applications may not work with your new Windows operating system. Check with the manufacturers.

Some hardware accessories and drivers may not work with the new operating system. Check the hardware compatibility list via Microsoft's or your PC manufacturer's website.

Replacing the operating system

To replace the operating system

Step	Action	Notes
1 Confirm data readiness.	Verify that Customer responsibilities described above have been performed.	
2 Confirm hardware readiness.	a Verify that the computer meets minimum hardware requirements. b Verify that the correct network card is installed in the computer.	See Chapter 1 of this manual for the specific hardware requirements.
3 Install the new operating system.	a Insert the CD-ROM of the new operating system in the drive. b Make these selections: - Format the hard drive. - Select NTFS file format. - Select Install the most common components. - Disable power saver features of the computer. - Set the computer clock. - Set the display for a minimum of 1024 x 768 x 65,536 colors.	- See the operating system documentation for details. - The new system must be either Windows XP Professional or Windows 2000 Professional. - This resolves Case 1.
4 Configure the network.		See Chapter 2.
5 Install the latest Service Pack for your operating system.	a Install Service Pack 1 (or later) for Windows XP Professional. Install Service Pack 4 (or later) for Windows 2000 Professional. b Reboot the computer.	This resolves Case 2.
6 For older MSD systems (firmware 3.01.57), install Agilent BootP Service.		See Chapter 2.
7 Install the MSD Security ChemStation software.		See Chapter 5.

Preparing Windows XP® Professional for software installation

The Windows XP firewall, which is enabled by default in new PCs, is not compatible with the MSD Security ChemStation. It must be disabled before continuing.

Certain appearance changes will make installation easier. The rest of this manual assumes that these changes have been made.

To prepare Windows XP Professional

Step	Action	Notes
1 Disable the firewall.	- a In Control Panel, double-click Network Connections. - b Right-click Local Area Connection. - c Select Advanced. The Local Area Connection Properties screen appears. - d Clear the checkbox. - e Click OK.	The firewall is not compatible with the MSD Security ChemStation software.
2 Select Windows classic folders.	- a Press  + e to open Windows Explorer. - b Press the Views icon at the right end of the toolbar and select List. - c Select Tools / Folder Options. - d In Tasks, select Use Windows classic folders. - e Click Apply.	The rest of this manual assumes that this has been done.
3 Display full paths in titles.	- a Select View. - b Check Display the full path in the title bar.	The rest of this manual assumes that this has been done.
4 Display file extensions.	- a Clear (uncheck) Hide extensions for known file types. - b Select Apply to All Folders. - c Reply Yes to the Folder views screen. - d Click OK. - e Exit Windows Explorer.	The rest of this manual assumes that this has been done.

Removing Existing MSD or GC/MS ChemStation Software

The operating system on your computer is either Microsoft Windows XP Professional or Windows 2000 Professional, with the correct Service Pack, but some version of an MSD or GC/MS ChemStation is already installed on your computer.

The MSD Security ChemStation software must be installed on a “clean” system. It cannot be installed over an existing installation of a different MSD or GC/MS ChemStation version.

To clean the system of existing ChemStation software

Step	Action	Notes
1 Backup data.	- a Archive all critical MSD data, methods, sequences, and/or libraries to an external device. - b Confirm that archive worked.	
2 Remove old ChemStation software.	- a Run the Configuration program and delete all instruments. Exit the program. - b On the Control Panel, select Add or Remove Programs. - c Select and remove MSD ChemStation. - d Delete directory MSDCHEM (HPCHEM on older systems). - e Reboot the computer.	• The Configuration program is part of the existing installation.
3 Remove BootP Service, if present.	- a Run the BootP Service program. - b Remove all entries. - c On the Control Panel, select Add or Remove Programs. - d Select and remove Agilent BootP Service. - e Reboot the computer.	

To clean the system of existing ChemStation software (continued)

Step	Action	Notes
4 Remove communications drivers.	a On the taskbar (lower right corner of screen), click IO and select Run IO Config. b Delete all entries from Configured Interfaces. c Exit program. d On the Control Panel, select Add or Remove Programs. e Select and remove Agilent IO Libraries. f Reboot the computer.	In action e, the entry may be SICL drivers.
5 After rebooting, install the new software.	a Install and configure communications, (LAN, Chapter 2) or (GPIB, Chapter 4). b Install and configure the MSD Security ChemStation software (Chapter 5).	

Microsoft Windows Requirements

- The MSD Security ChemStation software requires that all disk partitions on the ChemStation computer hard drives be formatted for NTFS and that active file systems are uncompressed.
- The TCP/IP networking protocols must be installed and enabled.
- Microsoft Internet Explorer 5.5 with Service Pack 2 or higher is required.
- Some devices, which Windows XP Professional or 2000 Professional support are not supported by MSD Security ChemStation software. For example, magneto-optical drives and external CD-ROM writers. They can be used for backup but cannot be written to directly.
- A Windows repair and recovery disk must be created during installation.

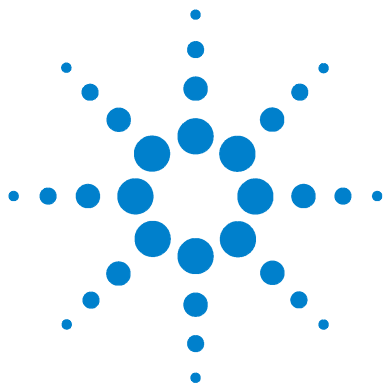
Other Documentation

Additional information is contained in the following:

- MSD Security ChemStation Online Help
- MSD Security User Guide
- MSD Security Manager Guide
- 5973 Series MSD Hardware Manuals
- 5973 Series MSD Hardware Installation Manual
- Local Control Panel Quick Reference

Product update news

For the latest information on the MSD Security ChemStation software, access <http://www.agilent.com>. See Life Sciences / Technical Support. You must enter your product registration number to access the Software Status Bulletin information.



2 Local Area Network Configuration

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This chapter describes network configuration activities for the 5973N or 5973 inert MSD instrument and the 6890N GC or a 6890 GC which has been upgraded to Local Area Network (LAN) communications.

If you have a GPIB-based system, skip this chapter and go to [Chapter 4](#).



Local Area Network Configuration Checklist and Table

Use this checklist to install and configure the GC and MSD on a LAN.

- ☐ Prepare the computer
 - ☐ Determine the IP addresses to use for the GC, MSD, and ChemStation computer and record them.

Unit	Computer	Instrument 1-GC	Instrument 1-MSD
Model			
Serial number			
MAC address			
Host name			
IP address	10.1.1.100	10.1.1.101	10.1.1.102
Hub port (default)	3	2	1
Subnet mask	255.255.255.0	255.255.255.0	255.255.255.0
Default gateway	10.1.1.100	10.1.1.100	10.1.1.100

- ☐ Determine the network subnet mask.
- ☐ Verify that Windows XP Professional or Windows 2000 Professional is the operating system.
- ☐ Verify that Service Pack 1 or higher is installed for Windows XP Professional or Service Pack 4 or higher is installed for Windows 2000 Professional.
- ☐ Install the Network Interface Card in the ChemStation computer if it is not installed. Remember to follow all electrostatic discharge safety precautions.
- ☐ Install (Windows 2000 only) and configure TCP/IP on the computer if it is not installed.

- ❑ Prepare the GC
 - ❑ Install an MIO JetDirect card in the 6890 (not 6890N) GC.
- ❑ Create the LAN
 - ❑ Connect a LAN cable from the hub or switch to the GC. Do not use a crossover cable. Do not use port 8.
 - ❑ Connect a LAN cable from the hub or switch to the MSD. Do not use a crossover cable. Do not use port 8.
 - ❑ Connect a LAN cable from the hub or switch to the computer. Do not use a crossover cable. Do not use port 8.
- ❑ Configure the instruments
 - ❑ **6890N GC:** Configure IP address and subnet address via the front panel.
 - ❑ **6890 GC with JetDirect card:** Install BootP Service to assign IP addresses. Add BootP entry for GC.
 - ❑ **5973 MSDs with firmware version 3.01.57:** Install Agilent BootP Service to assign IP addresses. Add BootP entry for MSD.
 - ❑ **5973 MSDs with firmware version 3.01.58 or later:** Assign the IP address via the keyboard.
- ❑ Install and configure SICL LAN drivers.
- ❑ Install and configure the MSD Security ChemStation software as described in [Chapter 5](#).

Preparing the Instruments

Agilent Technologies 5973N and 5973 inert MSDs have an integrated LAN interface within the instrument. The 6890 GC may be a 6890N, which also has an integrated LAN interface, or an earlier version which has been upgraded to LAN capability.

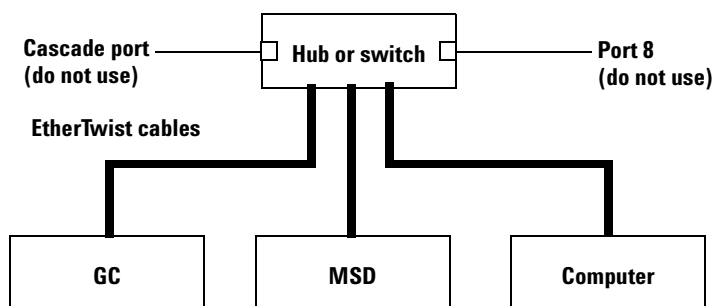
An older 5973 MSD system with a 6890 Series GC must use GPIB communications if not upgraded to LAN-based communications. See [Chapter 4](#).

Designing the LAN instrument network

The system must be configured initially as an isolated local network. An isolated local network is easier to configure and to verify performance. Even if the system will be connected to your site LAN, it must be qualified first as a local network.

Cabling the LAN instrument network

Connect standard (not crossover) EtherTwist cables from the network interface connectors on each instrument and on the MSD Security ChemStation computer to an EtherTwist hub or switch. Do not use the cascade port or port 8 on the hub.



Configuring the LAN instrument network

For isolated instrument networks, the IP addresses used are public addresses and are not recognized by a site LAN or the Internet. It is recommended that the first segment of the IP addresses be 10, as this number indicates that the address is an unassigned or public address. The first three segments in the IP addresses of the instruments and the MSD Security ChemStation computer must be the same, and the last segment must be different for each node and be in the range from 1 to 254. For example, the following IP addresses represent a typical isolated instrument network:

MSD Security ChemStation computer	10.1.1.100
GC instrument	10.1.1.101
MSD instrument	10.1.1.102

The subnet mask must be the same for all nodes on the local instrument network (typically: 255.255.255.0). For an isolated instrument network, which is not connected to a site LAN, the gateway entry may be left blank.

NOTE

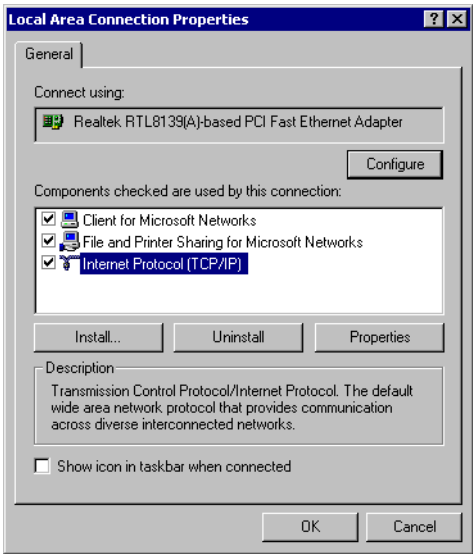
Once the IP addresses are assigned, you can specify a host name for each node. While host names are optional, they are easier to identify than IP addresses. Host names are associated with instruments during Agilent BootP Service configuration described later in this chapter. Host names are not required for operation of the GC/MS system.

Configuring the LAN Network

This procedure describes how to set up LAN networking. Have your original Windows XP Professional or 2000 Professional CD-ROM available as you might be prompted to place it in the drive. The network card must be installed prior to installation of TCP/IP drivers, otherwise an error is reported and the process terminated.

To configure the Windows network

Step	Action	Notes
1 Log on.	Log on as Administrator or other user with Administrator privileges.	
2 Create the network connection.	- a On Control Panel, double-click Network Connections. - b Double-click Local Area Connection . The Local Area Connection Properties dialog box appears.	If Local Area Connection does not appear, the Network Interface Card is not installed or detected. Shut down the computer, install the card, and start over.

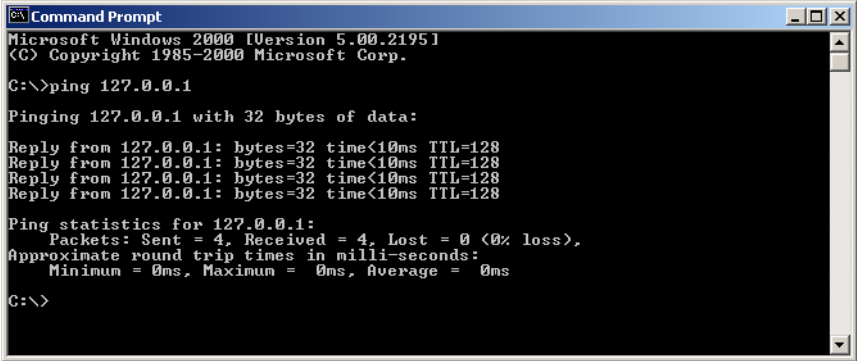


To configure the Windows network (continued)

Step	Action	Notes
3 Set the network protocol.	a Highlight Internet Protocol (TCP/IP). b Click Properties. The Internet Protocol (TCP/IP) Properties dialog box appears.	
4 Set the IP address and Subnet Mask for the computer.	a Click Use the following IP address. b Enter the IP address, Subnet Mask, and Gateway to be used for the computer. c Select OK. The Local Area Connection Properties dialog box appears.	• The default IP address is 10.1.1.100. • The default Subnet Mask is 255.255.255.0. • The default Gateway is 10.1.1.100.
5 Confirm the network card configuration.	a In the Local Area Connection Properties dialog box, click Configure and respond Yes to the popup message. The General tab of the Ethernet Adapter appears. b Click the Resources tab. If any device conflicts exist, they will be identified in the lower field. c Click the Power Management tab. A dialog box appears. Select the Allow the computer to turn off this device to save power checkbox. d Click OK.	• The name of the adapter depends on the manufacturer. • Do not change the default settings. • The General field should state that This device is working properly. If it does not, click Troubleshooter for online help.
6 Verify network installation and configuration.	a From Windows Start, select Run. b Type cmd and OK. The Command window opens. c Type cd c:\ and press Enter. d Type ping 127.0.0.1 and press Enter. If successful, a message like the following will appear.	• The address 127.0.0.1 performs a loopback test. • If not successful, TCP/IP is not configured.

Local Area Network Configuration

To configure the Windows network (continued)

Step	Action	Notes
7	Close all windows.	 A screenshot of a Windows Command Prompt window. The title bar reads 'Command Prompt'. The text inside shows the Windows version 'Microsoft Windows 2000 [Version 5.00.2195]' and copyright information. The user has entered the command 'C:\>ping 127.0.0.1'. The output shows four successful replies from 127.0.0.1 with 32 bytes of data, each taking less than 10ms and having a TTL of 128. Ping statistics for 127.0.0.1 are also displayed: 4 packets sent, 4 received, 0% loss, with minimum, maximum, and average round trip times all at 0ms. The prompt ends with 'C:\>'.

Configuring IP Addresses from the Keyboards

6890N GC

The Agilent 6890N GC communicates with a ChemStation via the LAN. It does not require or use BootP Service software.

This procedure applies only when adding a 6890N GC. If BootP Service is already installed to provide IP addresses to instruments, BootP should remain installed and enabled.

To configure the IP address for a 6890N GC

Step	Action	Notes
1 Display the Communication screen.	a Press [Options] on the GC keyboard. b Scroll to Communication and press [Enter]. This screen appears: COMMUNICATION SETPTS --- LAN ---- IP: 000.000.000.000 < GW: 000.000.000.000 SM: 000.000.000.000 Enable DHCP OFF ---- RS-232 ----	
2 Enter the IP Address for the GC.	a Enter the numbers separated by dots. b Press [Enter]. Press Clear	A message tells you to power cycle the GC. <i>Do not power cycle at this time.</i>
3 Enter the Gateway number.	a Scroll to GW. b Leave the entry blank. c Press [Enter]. Press [Clear].	A message tells you to power cycle the GC. <i>Do not power cycle at this time.</i>
4 Enter the Subnet Mask.	a Scroll to SM and press [Mode/Type]. b Scroll to the appropriate subnet mask from the list of modes. c Press [Enter]. d Power cycle the GC to apply the setpoints to the LAN card.	
5 Confirm the setpoints.	a Press [Options], scroll to Communications and press [Enter].	Confirm that the correct setpoints are present.

5973 LAN-based MSD with firmware 3.01.58 or higher

NOTE

A 5973 Series MSD with firmware 3.01.57 requires BootP Service to assign TCP/IP addresses. See [“Installing Agilent BootP Service”](#) on page 33 for more information.

When a 5973 Series MSD is turned on, it looks for BootP Service. To disable BootP, hold the **[No/Cancel]** key on the local control panel for about 5 seconds. A message states that BootP has been disabled and that firmware is being downloaded.

To configure the IP Address

Step	Action	Notes
1 Display the IP Address.	a On the local control panel, press [Menu] until the Network menu appears. b Press [Item]. The IP Address appears.	• The address is 0.0.0.0 if BootP was aborted. • The address is 10.1.1.102 if BootP was used to assign the IP Address.
2 Edit the IP Address.	• Press the [Yes/Select] key on the local control panel. This display appears: EDIT MSD IP >000<000.000.000	
3 Enter the new IP Address.	a Use the up arrow to increase the value. b Use the down arrow to decrease the value. c Use [Item] to move to the next group of numbers to edit. d When done, press [Yes/Select] to temporarily save the new IP Address.	• The IP Address is not permanently saved until you update the flash memory at Step 6.
4 Edit the Gateway address.	a Press the [Item] key. b Repeat Step 3 to edit the Gateway address. c Press [Yes/Select].	
5 Edit the Subnet Mask.	a Press the [Item] key. b Use the arrow key to enter the Subnet Mask. c Press the [Item] key.	

To configure the IP Address (continued)

Step	Action	Notes
6	Update the flash memory with the new values. a Press the [Item] key until you see either Reboot with new network settings? or Cycle MSD power now to activate changes. b If you see Reboot with new network settings?, press [Yes/Select] to reboot the MSD. c If you see Cycle MSD power now to activate changes, manually power cycle the MSD.	

Installing Drivers for TCP/IP Support

The Standard Instrument Control Library (SICL) drivers are supplied on the MSD Security ChemStation CD-ROM. If a previous version of the SICL drivers was installed, it must be removed prior to the installation of the current version.

Drivers are provided to support either a LAN-based system or a GPIB-based system:

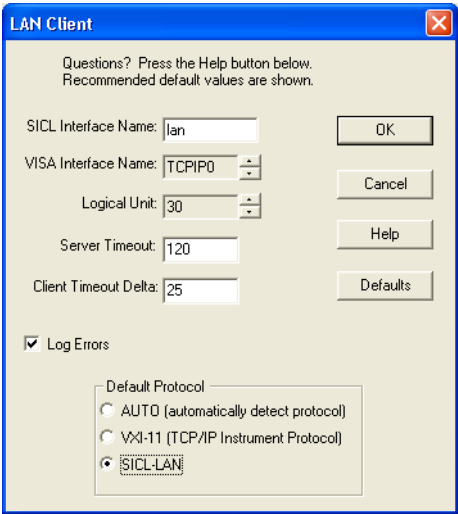
- If your system is LAN-based, continue with this section to install drivers for TCP/IP support.
- If your system is GPIB-based, skip this section and continue to [Chapter 4](#) where installation of the appropriate GPIB drivers is described.

To install the SICL LAN drivers

Step	Action	Notes
1	Close all running Window applications.	
2	Insert the MSD Security ChemStation CD-ROM in the drive.	• If the setup program starts automatically, press [Cancel] to exit. • The MSD ChemStation software will be installed later.
3	Start the SICL InstallShield wizard.	• Press  + e to open Windows Explorer. Double-click the iolibs.exe.exe file in the \SICL directory. • The compressed library files are extracted.
4	Read and acknowledge the introductory screens.	a The IO Libraries screen appears; click Next>. b The License Agreement screen appears; click Yes after reading. c The Readme Information screen appears; click Next>.
5	Select an Installation Option .	• Click Full Installation. The Current Settings screen appears. • Components to be installed are listed.
6	Accept the Current Settings .	• Click Next. • Files are copied to disk.

To install the SICL LAN drivers (continued)

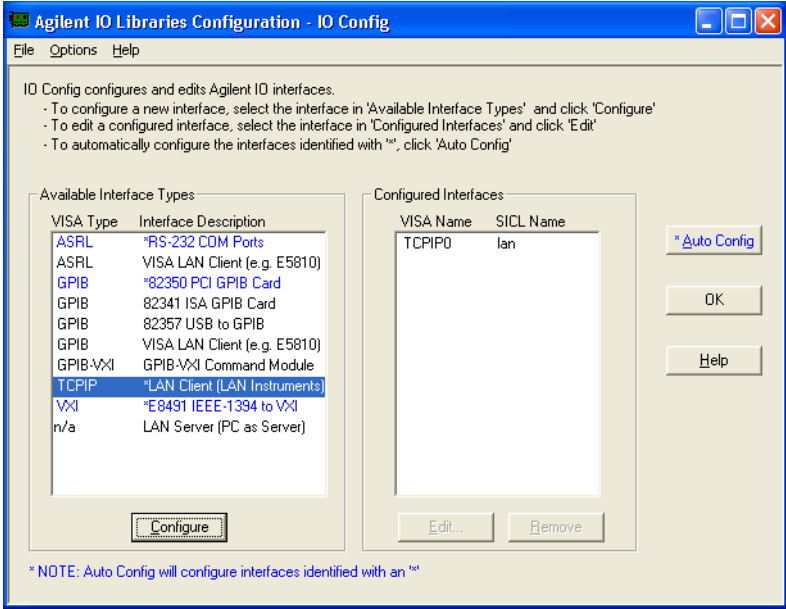
Step	Action	Notes
7 Run IO configuration.	When the success screen appears: a Select Run IO Config. b Click Finish. c If prompted, select Manually configure interfaces and click Next.	To run IO configuration <i>only</i> , follow Start > Programs > Agilent IO Libraries > IO Config.
8 Select the interface to be configured.	a Select TCPIP *LAN Client (LAN Instruments). b Click Configure. This screen appears:	

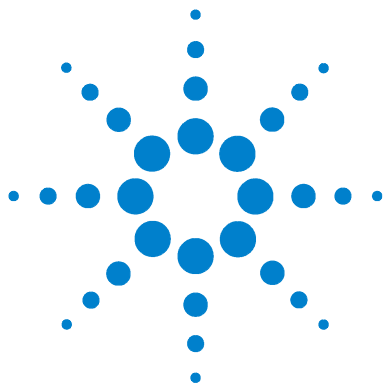


9 Select SICL-LAN.	a Select SICL-LAN as the Default Protocol. b Click OK.	• The confirmation screen appears.
--------------------	--	------------------------------------

Local Area Network Configuration

To install the SICL LAN drivers (continued)

Step	Action	Notes
		
10	Confirm TCP/IP configuration.	a Note that TCP/IP0 lan appears in the Configured Interfaces box. b Click OK. • These entries confirm LAN support from the IO libraries.
11	Reboot the computer.	a Remove the CD from the drive. b Restart the computer to make the support settings permanent.



3 Installing Agilent BootP Service

Purpose	34
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Instrument Configuration	37
Configuring Agilent BootP Service	39

Agilent BootP Service software should only be installed for older GC (6890 GCs with a JetDirect card installed) and MSD instruments (5973 Series MSD firmware version 3.01.57 and lower).

Agilent BootP Service is *not* required for the 6890N GC or for the 5973 MSD with software version 3.01.58 or higher.



Purpose

Agilent BootP Service provides central administration of IP addresses for Agilent instruments on a LAN. The service runs on the instrument LAN PC, which must be running TCP/IP network protocol and cannot run a DHCP server or another BootP server.

When an instrument is powered on, an Agilent JetDirect card in the instrument broadcasts a request for an IP address or Host Name and provides its hardware address as an identifier. The request may continue for up to 5 minutes. The Agilent BootP Service answers this request and passes a previously defined IP address and Host Name associated with the hardware address to the requesting instrument.

When the instrument receives its IP address and Host Name, it stops broadcasting the request. It maintains the IP address as long as it is powered on. Powering down the instrument causes it to lose its IP address, so the Agilent BootP Service must be running when the instrument is next powered on to reestablish the correct address.

Addresses

Before installing and configuring BootP Service, you must know the IP addresses of the computer and instruments, the subnet mask, and the gateway. Since the system is on an isolated LAN, these default addresses can be used.

Device	Address
PC	10.1.1.100
MSD	10.1.1.101
GC	10.1.1.102
Subnet mask	255.255.255.0
Gateway	10.1.1.100

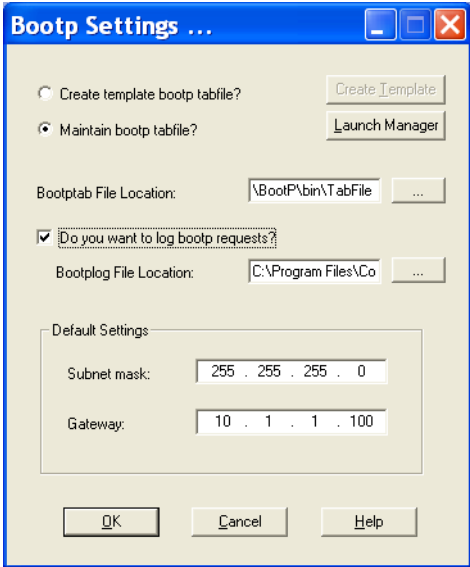
Installation

To install Agilent BootP Service

Step	Action	Notes
1 Log on.	Log on as Administrator or other user with Administrator privileges.	
2 Close all Windows programs.		
3 Load the CD-ROM.	a Insert the MSD Security Software CD-ROM in the drive. b If the setup program starts automatically, click Cancel to stop it.	The ChemStation software will be installed separately. See Chapter 5.
4 Install the Agilent BootP Service.	a Press  + e to open Windows Explorer. This takes a few seconds. b Double-click x:\Bootp\Agilent Bootp Service.exe, where x: is the CD-ROM drive letter. c If necessary, click the Agilent Bootp Service... icon in the taskbar. d The Welcome screen appears. Click Next>. e The License Agreement screen appears. Read it, then click Yes. f Files load; when finished, the BootP Settings screen appears.	- The BootP Settings screen contains unconfigured default settings. They will be corrected during the configuration procedure. - The IPCONFIG utility can be used to verify the TCP/IP settings by opening a command window and typing ipconfig /all.

Installing Agilent BootP Service

To install Agilent BootP Service

Step	Action	Notes
		
	g Select Maintain bootp tabfile. h Check Do you want to log Bootp requests? i In the Default Settings part of the screen, enter the subnet mask and gateway. j Click OK. The “Install Wizard Complete” screen appears.	• See your network administrator if you do not know the subnet mask and gateway. • The default subnet mask is 255.255.255.0. • The default gateway is 10.1.1.100.
5	Complete installation. • Select Yes, I want to restart my computer now. • Remove the CD-ROM from the drive. • Click Finish. The computer reboots.	• This completes installation.

Instrument Configuration

Agilent BootP Service maintains association between a unique identification code (MAC address) provided with the LAN card installed in a given instrument and the specific IP address assigned to that instrument. Therefore, whether adding a new instrument, exchanging an instrument (or its LAN card), or changing the IP address assigned to an instrument, all require defining or redefining this association.

To configure instruments using Agilent BootP Service

Step	Action	Notes
1 Determine the MAC address of the GC with the JetDirect card installed..	EITHER using Agilent BootP Service: a Power cycle the GC. b After the GC completes self-test, open the logfile using Notepad. The contents will be similar to that shown below. 02/25/04 15:30:49 PM Status: BOOTP Request received at outer most layer Status: BOOTP Request received from hardware address: 0010835675AC Error: Hardware address not found in BOOTPTAB: 0010835675AC Status: BOOTP Request finished processing at outer most layer c Record the MAC address (0010835675AC), here called the hardware address). d Close the logfile before turning on another instrument.	- The default location for the LogFile is My Computer\Local Disk\Program Files\Common Files\Agilent Shared\BootP\bin\logfile. - The logfile will not be updated if it is open. - BootP is not used for the 6890N.
	OR from a JetDirect card in a 6890 GC: a Turn off the GC. b Remove the JetDirect card. c Read the MAC address from the label. d Reinstall the card. e Turn on the GC.	The MAC address is printed on a label on the noncomponent side of the JetDirect card. It is the number <i>below</i> the barcode and <i>after</i> the colon (:) and usually begins with the letters AD.

To configure instruments using Agilent BootP Service (continued)

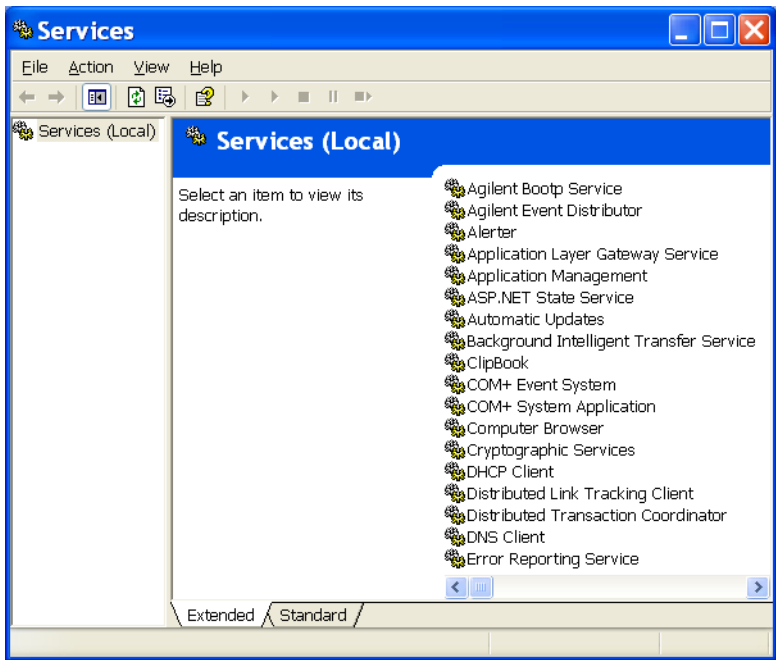
Step	Action	Notes
2 Determine the MAC address of an older MSD with firmware version 3.01.57 or earlier.	a On the Local Control Panel, press the [Menu] key to get to Network, then press [Item] to get to MAC address. b Record the MAC address.	• The displayed colons (:) are <i>not</i> part of the address.
3 Add the GC to the network.	a Follow Start/Programs/Agilent BootP Service/Edit BootP Settings. The Bootp Settings screen appears. b Uncheck Do you want to log Bootp requests? c Click Launch Manager. The Bootp Manager screen appears. d Click Add... The Add Bootp Entry screen appears. e Make these entries for the GC: • MAC Address • Host Name • IP Address • Comment, if desired • Subnet Mask • Gateway address f Click OK. g Exit Manager and power cycle the GC. h Ping the IP address to verify.	• The Do you want to log Bootp requests? box must be unchecked when finished configuring instruments or the logfile will quickly fill up disk space. • If changing the IP address, it will be necessary to power cycle the instrument for the changes to take effect.
4 Add the MSD to the system.	a Repeat step 3 to add the MSD. b When finished, click Exit Manager. c Click OK. d Press the [Item] key until you see Reboot with new network settings?. Press [Yes/Select] to reboot the MSD.	

Configuring Agilent BootP Service

BootP Service starts automatically when your PC reboots. To change BootP settings, the service must be stopped, the changes made, then restarted.

To configure Agilent BootP Service

Step	Action	Notes
1	Stop BootP Service.	a On Control Panel, select Administrative Tools > Services. The Services screen appears.

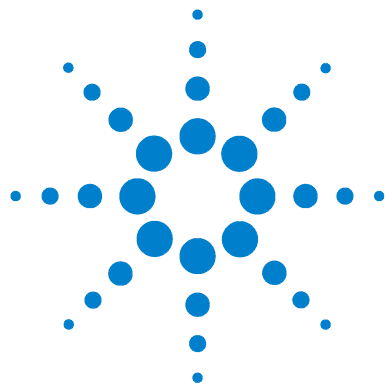


- b Right click **Agilent Bootp Service**.
- c Select **Stop**.
- d Close the **Services** and **Administrative Tools** screens.

Installing Agilent BootP Service

To configure Agilent BootP Service

Step	Action	Notes
2 Edit the BootP Settings.	Follow Start > Programs > Agilent Bootp Service > Edit BootP Settings. The Bootp Settings screen appears.	When the Bootp Settings screen is first opened, it shows the default settings from installation.
3 Configure the TabFile.	a Select Maintain bootp tabfile? to edit the existing tabfile. b To change the Bootptab File Location, use the browse button on the right (a valid BootP tabfile must exist). c To create your own template for the tabfile, select Create template bootp tabfile? and click Create Template.	A default tabfile was created at installation and is located at \Program Files\Common Files\Agilent Shared\BootP\bin\TabFile. It contains configuration information entered on this screen.
4 Configure the logfile.	a Check Do you want to log bootp requests?. b To change the Bootplog File Location, use the browse button on the right (a valid BootP logfile must exist). c Uncheck Do you want to log bootp requests?.	A default log file was created at installation and is located at \Program Files\Common Files\Agilent Shared\BootP\bin\logfile. It contains an entry for every time a device requests configuration information from BootP.
5 Finish up.	Click OK to save the values or Cancel to discard them. The program ends.	
6 Restart BootP Service.	a On Control Panel, select Administrative Tools > Services. The Services screen appears. b Right click Agilent BootP Service. c Select Start. d Close the Services and Administrative Tools screens. e This completes configuration.	



4 GPIB Driver Installation

Installation Checklist for GPIB-Based Systems [42](#)

Installing Drivers for GPIB Support [43](#)

This chapter describes how to install and configure GPIB drivers required for 5973 MSDs and/or GPIB-based 6890 GC instruments.



Installation Checklist for GPIB-Based Systems

This checklist summarizes the installation and configuration steps for GPIB-based systems (5973 MSD and/or 6890 GC).

- ☐ Verify operating system prerequisites described in [Chapter 1](#).
- ☐ Verify that an 82350B GPIB card is installed in the ChemStation computer.
- ☐ Design the GPIB instrument system.

It is best to connect GPIB devices in a “chain” where a GPIB device is connected to the next GPIB device, and it, in turn, is connected to the next, and so on. If at all possible, avoid “star” configurations (connecting all devices to a central point).

- ☐ Install and configure GPIB Drivers from the MSD Security ChemStation CD-ROM.
- ☐ Install the MSD Security ChemStation software ([Chapter 5](#)).

Installing Drivers for GPIB Support

The Standard Instrument Control Library (SICL) drivers are supplied on the MSD Security ChemStation CD-ROM. If a previous version of the SICL drivers have been installed, they must be removed prior to the installation of the current version.

- If your system is GPIB-based, continue with this section to install drivers for GPIB support.
- If your system is LAN-based, skip this chapter and go to [Chapter 2](#) where installation of the appropriate LAN drivers is described.

NOTE

A GPIB card must be installed in your PC or installed drivers cannot be configured. GPIB SICL drivers must be version M.01.01 or later.

If your PC is being rebooted following installation of a GPIB card, the Found New Hardware Wizard screen will appear. **If the New Hardware Wizard starts, click Cancel to immediately exit.**

To install the GPIB drivers

Step	Action	Notes
1	Close all running Windows applications.	
2	Insert the MSD Security ChemStation CD-ROM in the drive.	• If the setup program starts automatically, press [Cancel] to exit. • The ChemStation software will be installed later (Chapter 5).
3	Start the SICL InstallShield Wizard.	• Press  + e to open Windows Explorer. Double-click file iolibs.exe.exe in the \SICL directory.
4	Read and acknowledge the introductory screens.	• The Agilent IO Libraries screen appears, click Next>. • The License Agreement screen appears; read and click Yes. • The Readme Information screen appears; click Next>. • The Readme file can be printed at the end of installation.

GPIB Driver Installation

To install the GPIB drivers (continued)

Step	Action	Notes
5	Select an Installation Option .	- Click Full Installation. The Current Settings screen appears. - Components to be installed are listed.
6	Accept the Current Settings .	- Click Next>. Installation begins. - Files are copied to disk.
7	Run IO configuration.	After installation finishes: a Select Run IO Config. b Click Finish. c If prompted, select Manually configure interfaces and click Next. IO Config can be run later, either from the IO icon on the taskbar or from the Agilent IO Libraries group on the Start > Programs menu.
8	Select the interface to be configured.	a Select GPIB 82350 PCI GPIB Card. b Click *Auto Configure. c If the following message appears, click OK to show the IO Configuration screen.



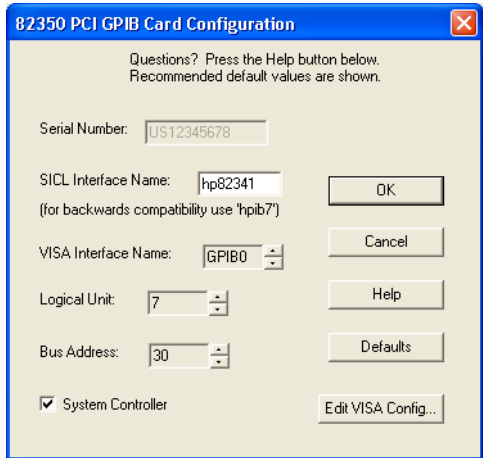
To install the GPIB drivers (continued)

Step	Action	Notes
9	Set the configuration parameters. a In the Configured Interfaces column, select GPIB0. b Click Edit. The GPIB Card Configuration screen appears.	The screen now contains a GPIB entry in the Configured Interfaces column.
82350 PCI GPIB Card Configuration Questions? Press the Help button below. Recommended default values are shown. Serial Number: US12345678 SICL Interface Name: gpib0 (for backwards compatibility use 'hpib7') VISA Interface Name: GPIB0 Logical Unit: 7 Bus Address: 21 ☒ System Controller OK Cancel Help Defaults		
	c Change the SICL Interface Name to hp82341 (hp must be lower-case). d Use the scroll arrows to change Bus Address to 30. e Click OK. Configuration is complete.	
10	Reboot the computer.	Power cycle the computer to make the support settings permanent.
11	After rebooting. a Follow Start > Programs > Agilent IO Libraries > IO Config to verify the configured GPIB interface. b Select GPIB0 hp82341 in the Configured Interfaces box.	

To install the GPIB drivers (continued)

Step	Action	Notes
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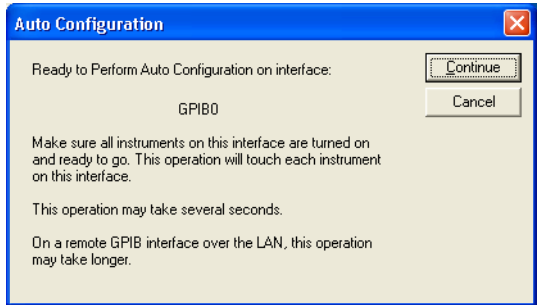
- c** Click **Edit**. The GPIB Card Configuration screen appears.



The dialog box is titled "82350 PCI GPIB Card Configuration". It contains the following fields and buttons:

- Serial Number: US12345678
- SICL Interface Name: hp82341 (for backwards compatibility use 'hpib7')
- VISA Interface Name: GPIB0
- Logical Unit: 7
- Bus Address: 30
- Buttons: OK, Cancel, Help, Defaults, Edit VISA Config...
- Checkboxes: ☒ System Controller

- d** Click **Edit VISA Config**. The **Show Devices** screen appears.
- e** Click **Auto Add devices**. The **Auto Configuration** screen appears.
- f** Click **Continue**.

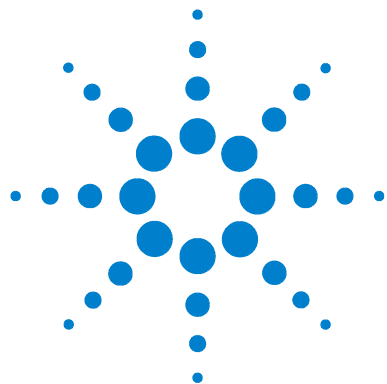


The dialog box is titled "Auto Configuration". It contains the following text and buttons:

- Ready to Perform Auto Configuration on interface: GPIB0
- Buttons: Continue, Cancel
- Text: Make sure all instruments on this interface are turned on and ready to go. This operation will touch each instrument on this interface.
- Text: This operation may take several seconds.
- Text: On a remote GPIB interface over the LAN, this operation may take longer.

To install the GPIB drivers (continued)

Step	Action	Notes
12 Possible message!	If you get the following message, possible causes include: incorrect GPIB card configuration, GPIB cables not connected, instruments not turned on, unsupported hardware devices. Power cycle the computer as the first step in troubleshooting.	
VISACF32 Auto-Add encountered an error while trying to find devices. If you have just installed the I/O Libraries, or if you have just changed any SICL parameters for this interface, you need to save all I/O Config information by pressing 'OK' in all dialog boxes, then reboot your machine. After rebooting, Auto-Add devices should work. OK		
13 Auto Configuration Complete!	a GPIB0::20 identifies the MSD (default address 20). b GPIB0::15 identifies the GC (default address 15). c Click OK.	The new devices were found if auto configuration succeeds.
Show Devices ☒ Identify devices at run-time Devices present on interface GPIB0: GPIB0::15 GPIB0::20 OK Cancel Add device Remove device Auto Add devices		
14 Confirm devices are online.	a Click OK. The GPIB Card Configuration screen appears. b Click Cancel. The IO Config screen appears. c Click OK to exit.	Note SICL Interface Name = hp82341 and Bus Address = 30.



5 Installing MSD Security ChemStation Software

Installing MSD Security ChemStation Software 50

This chapter describes how to install the MSD Security ChemStation software.



Installing MSD Security ChemStation Software

Before you start:

- Make sure the ChemStation computer has Windows XP Professional or Windows 2000 Professional software installed and configured as described in [Chapter 1](#).
- The computer file system must be NTFS. See the Windows documentation on how to convert to NTFS.
- 5973N and 5973 inert MSDs: make sure the LAN is configured as described in [Chapter 2](#).
- 5973 MSD: make sure GPIB is configured as described in [Chapter 4](#).
- 6890N or 6890 with LAN upgrade: make sure 6890 is configured as described in [Chapter 2](#).
- 6890 without LAN capability: make sure 6890 is configured as described in [Chapter 4](#).
- Any previous version of MSD or GC/MS ChemStation software *must* be removed prior to loading this software. See the MSDManager/Administrator Guide for details.

To install G1732AA MSD Security ChemStation software

Step	Action	Notes
1 Log on.	• Log on as Administrator or other user with Administrator privileges.	
2 Close programs.	• Close all Windows programs.	
3 Confirm the default printer.	a Follow Start > Printers and Faxes. b Look for an entry with a very small check mark in its icon.	• If there is no default printer, right-click one and check the Set as Default Printer line. • The default printer <i>must</i> be local. Networked printers are not supported.

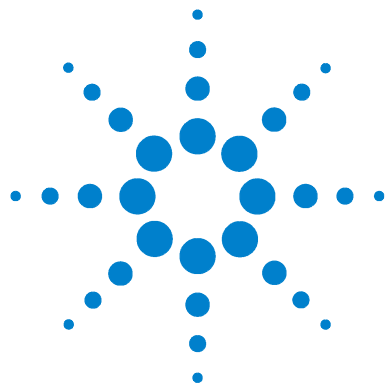
To install G1732AA MSD Security ChemStation software (continued)

Step	Action	Notes
4 Load the software.	a Insert the CD-ROM in the drive. b If it does not start automatically, double-click setup.exe in the root directory of the CD-ROM.	I/O libraries must be installed before software installation. The correct version of Agilent I/O Libraries is located in a subdirectory on the installation CD.
5 Respond to InstallShield.	a The InstallShield Welcome screen appears. Click Next>. b The License Agreement screen appears. Read it, then click Yes. c The Customer Information screen appears. Enter User Name and Company Name, then Next>. d The Choose Destination Location screen appears. Select the largest available partition. Click Next>. e The Registration screen appears. Enter the Software Registration Number, then click Next>. f The Start Copying Files screen appears. It shows that the MSD Security Software is ready to be installed. Click Next>. Installation begins.	- The Software Registration Number is on a separate paper. - The default location for installation is D:\MSDChem, which is recommended. If you prefer a different directory, the directory name cannot contain spaces.
6 Reboot the computer.	a When installation ends, the InstallShield Wizard Complete screen appears. b Remove the CD-ROM from the drive and store it with the Software Registration Number. c Select Yes, I want to restart my computer now. d Select Finish. The computer reboots.	After Finish, a message may appear telling you to insert a disk. Click Continue.
7 Arrange the desktop.	a After the computer restarts, log on again. b There are two new icons on the desktop. Arrange them as desired. c The MSD Security Monitor appears in the lower right corner of the screen.	The new icons are Config and Set Default Printer.

Installing MSD Security ChemStation Software

To install G1732AA MSD Security ChemStation software (continued)

Step	Action	Notes
8 Set the default printer.	d Double-click the Set Default Printer icon.	• The default printer is defined in the Windows Control Panel. The Set Default Printer icon transfers this definition into the secure software. • This operation must be done before configuring the instruments.
9 Configure the instruments.	• See Chapter 3 of the MSD Manager Guide.	



6 Troubleshooting

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This chapter describes procedures to help you determine problem locations in your system and how to solve them.



Network Verification Tests

To perform the network verification test

Step	Action	Notes
1 Start the test.	a Login as Manager. b Select Start/All Programs/MSD Security ChemStation/Config. c Select Help/Check Networking.	This sequentially performs the tests described in “Network Verification Tests” on page 54. The sequence of tests halts at the first problem found.
2 If no errors are detected.	a These messages appear: MSD@ www.xxx.yyy.zzz Passed all Network Tests. OK to run the MSD Security ChemStation	www.xxx.yyy.zzz is the IP address of the MSD.
3 If a problem is detected.	a One of these messages appears: Loopback @ 10.1.1.100 of instrument 1 failed the Ping test. GC @ 10.1.1.101 of instrument 1 failed the Ping test. MSD @ 10.1.1.102 of instrument 1 failed the Ping test. MSD @ 10.1.1.102 of instrument 1 failed the Ping by name test. MSD @ 10.1.1.102 of instrument 1 failed the RPCINFO test. MSD @ 10.1.1.102 of instrument 1 failed the SCQ test. Network Problem must be fixed prior to running MSD Security ChemStation.	- The following default IP addresses were used in the examples: - Computer 10.1.1.100 - GC 10.1.1.101 - MSD 10.1.1.102 - After fixing the problem, repeat Step 1.

Generally, if the networking tests are successful, the MSD Security ChemStation will start up properly and the system will run properly. If you do get one of the error messages, review troubleshooting information in the remainder of this chapter.

Other Network Verification Tests

Several additional network verification tests are performed whenever a LAN-based GC/MSD is started up. If these tests succeed, the instrument will start up. If they fail, you will see one of these messages and MSD Security ChemStation startup will halt:

- **GC at IP address `www.xxx.yyy.zzz` Did Not Respond.**
- **MSD at IP address `www.xxx.yyy.zzz` Did Not Respond.**
- **Warning: Configure Instruments to be in the same subnet with Agilent BootP Service.**

The first two messages indicate the GC or MSD did not respond to the ping test. The third message indicates there may be something fundamentally wrong with the IP address or subnet mask assignments for the computer, the GC, and/or the MSD.

NOTE

If you get any of these error messages when starting up the MSD Security ChemStation, run Check Networking in the MS Configuration program as described in the previous section. Run Check Networking if networking tests in the MSD Security ChemStation succeed but the instrument fails to run correctly or messages such as "MSD did not respond." appear.

For most networking situations, the following rules apply. Do not deviate from these rules unless you are knowledgeable about IP addresses, subnet masks, and gateways.

- 1 The subnet mask for the computer, the GC, and the MSD should be **255.255.255.0**.
- 2 The first three segments of the IP address for the computer, the GC, and the MSD must be the same. If **`www.xxx.yyy.zzz`** represents an IP address, then **`www.xxx.yyy`** must be the same for the computer, the GC, and the MSD.
- 3 The last segment of the IP address for the computer, the GC, and the MSD must be different for each. If **`www.xxx.yyy.zzz`** represents an IP address, then **`zzz`** must be different for the computer, the GC, and the MSD.

Checking Addresses

To check address settings

Step	Action	Notes
1 Check the IP Address, subnet mask, and gateway of the ChemStation computer	- On the Control Panel, double-click Network Connections. - Select Local Area Connection. - Select Internet Protocol (TCP/IP). - Click Properties and make sure the PC uses the correct defined IP address.	The default IP address is 10.1.1.100.
2 Check the IP Address, subnet mask, and gateway of the 6890N GC and 5973N MSD (firmware 3.01.58)	- Use the GC front panel to verify its IP address. - Use the MSD local control panel to verify its IP address.	- Default IP addresses are: - GC 10.1.1.101 - MSD 10.1.1.102
3 For older systems (6890 and MSD firmware 3.01.57) using Agilent BootP Service	- Select Start > All Programs > Agilent BootP Service > Edit BootP Settings. - Check the Default Settings to make sure they match the correct configuration. - Select Launch Manager to display hardware (MAC) address, Host Name, IP Address, Comment, Subnet Mask, and Gateway. - Check all entries. To fix a bad entry, select it and then select Modify.	- Correct default settings are: - Subnet mask 255.255.255.0 - Gateway 10.1.1.100 - For more information about the MSD hardware (MAC) address, see "Installing Agilent BootP Service" on page 33.

Isolate the Problem

Here are some approaches you can try to help you determine what part of the system is causing a problem. First, characterize the problem as a constant or intermittent failure. Intermittent failures are discussed later in this Chapter.

Try a different computer

If you have another computer with the same revision of software, can you configure and run the analytical instrument that isn't working? If so, the problem may be the computer.

If you do not have another computer already configured, you can install the SICL drivers, Agilent BootP Service (if required), and MSD Security ChemStation software on another computer for diagnostic purposes.

If you have other computers on the same LAN, can they Ping the MSD Security ChemStation computer, the GC, or the MSD? If they can, then you know that certain equipment is probably good. It is important to rule out malfunctioning of even the smaller network components, such as hubs, switches, and LAN cables.

Re-establish a local instrument LAN

If the system has been connected to a site LAN, it must be reconfigured as a local instrument LAN as described in [Chapter 2](#) so components in the network are limited to:

- The computer with its network card
- The GC with LAN communication network printer addresses.
- The MSD with its embedded LAN/MS Control card
- The hub or switch
- Three LAN cables

Run the Check Networking tests described on [page 54](#). If the system passes the tests, try to run the system. If the system operates normally as an isolated LAN, but fails on the site LAN, the problem might be LAN traffic, duplicate IP addresses, or other network configuration problems.

Remember to check network printer IP addresses. If a printer is turned on or off, it can cause intermittent failures if its address duplicates that of an instrument.

Check cabling

Before examining PC hardware and drivers, check the cabling.

To check the LAN cabling

Step	Action	Notes
1 Cycle power to the hub or switch.	If the hub or switch has a 'POST' ("Power-On and Self-Test") described in its manual, verify it is correct.	
2 Check the cables and hub or switch.	a Physically trace the three cables back to the computer, to the GC, and to the MSD. b Verify cables are plugged in firmly. c Verify the cascade port of the hub or switch is not being used. d Verify the power cord of the power adapter is firmly plugged in. e Try moving the cables. This can reveal a faulty connector.	If you have a crossover LAN cable, verify it is <i>not</i> being used. Do not connect crossover cables to the hub or switch.
3 Try installing new LAN cables.		

Check the MSD Security ChemStation computer

If the cabling is correct, check the computer.

To check the MSD Security ChemStation computer

Step	Action	Notes
1 Clear and save the System and Application Logs .	- On Control Panel, select Administrative Tools > Event Viewer. - Right-click Application. - Select Clear all events. - Reply Yes to the question about saving the log. - Supply a name and Save the log. - Repeat actions b through e for the System Log.	
2 Reboot and log in.	- Reboot the computer. - Log in with administrative privileges.	
3 Examine the logs for new entries.	Use Event Viewer to examine the System and Application logs for network-related error messages.	Look for hardware problems with the network card, TCP/IP configuration errors, duplicate IP addresses, etc.
4 Perform a loopback test.	- From Start, select Run. - Type cmd and select OK. A command window opens. - Type ping 10.1.1.100 and press Enter. - Type Exit to close the window.	- If test is successful, the MSD Security ChemStation computer, its network card, and TCP/IP configuration are good. - If test fails or times out, a serious LAN problem is present and must be resolved before proceeding. Resolving the problem requires complete access to the original media for all operating system software and drivers for hardware peripherals such as mouse and printer. Resolution may even require that the computer be completely reinstalled or rebuilt.

Check system integrity

If cabling and the computer are not the problem, try these tests.
The suggestions are ordered from least to most drastic.

To check system integrity

Step	Action	Notes
1 Virus test.	• Run a current and competent virus detection program.	• Viruses can cause a computer to either fail completely or to behave erratically.
2 Examine the BIOS.	- a Examine the BIOS settings of the ChemStation computer to ensure no setting precludes use of LAN. - b Disable superfluous hardware in the BIOS to avoid IRQ and/or other resource conflicts.	
3 Remove and reinstall TCP/IP with the current network card (<i>Windows 2000 only</i>).	To uninstall the TCP/IP driver - a On Control Panel, double-click Network and Dial-up Connections. - b Right-click Local Area Connection and select Properties. - c Select TCP/IP Protocol. - d Click Uninstall. - e Reboot the MSD Security ChemStation. To install the TCP/IP driver - a On Control Panel, double-click Network and Dial-up Connections. - b Right-click Local Area Connection and select Properties. - c Select Install, then select Protocol as the network component to install. - d Select TCP/IP, then OK. - e Reboot the MSD Security ChemStation and reload any Service Pack(s).	• Some systems display a hardware wizard to help guide you through these steps.

To check system integrity (continued)

Step	Action	Notes
4 Remove and reinstall TCP/IP with a different network card (<i>Windows 2000 only</i>).	To uninstall the TCP/IP driver a On Control Panel, double-click Network and Dial-up Connections . b Right-click Local Area Connection and select Properties . c Select Install , then select Protocol as the network component to install. d Select TCP/IP . e Click Uninstall . f Shut down the MSD Security ChemStation. g Follow ESD guidelines to remove the existing network card and install a new network card. h Turn the MSD Security ChemStation on.	- Some systems display a hardware wizard to help guide you through these steps. - You may need an operating system CD to reload TCP/IP.
	To install the TCP/IP driver a On Control Panel, double-click Network and Dial-up Connections . b Right-click Local Area Connection and select Properties . c Select Install , then select Protocol as the network component to install. d Select TCP/IP , then OK . e Reboot the MSD Security ChemStation and reload any Service Pack(s).	
5 Remove the existing network card and install a new one (<i>Windows XP only</i>).	a Follow the card manufacturer's instructions. b After uninstalling the first card, turn on the computer so that its driver is loaded, then shut down and install the new card. c Open a command window. d Type <code>netsh int ip C:\resetlog.txt</code> , then press Enter .	Actions c and d remove and rewrite the TCP/IP stack.

Check the GC

If the cabling, computer, and system integrity test have been passed, proceed to check out the GC.

To check out the GC

Step	Action	Notes
1 Test the LAN hardware.	From the keyboard of the GC, access Config/Diagnostics/Electronics/Communication/MIO_Destructive_Test.	Success means that the GC recognizes presence of the LAN card (internal or embedded) and can reboot it.
2 Test the LAN configuration (for non-6890N GCs).	a Cycle power to the GC and wait 40 seconds to determine if Agilent BootP Service detected the BootP request. b If the BootP Service <i>did</i> detect the BootP request: Did the BootP request supply the correct IP address? Yes. Can you ping the GC? Yes. The GC is configured properly on the network. No. The GC could be controlled by another BootP server. Check network. No. Add the new MAC address to the BootP Server; delete the old MAC address that had been assigned to that IP address. Now can you ping it? Yes. The GC is configured properly on the network. No. Verify hardware connections. c If the BootP Service <i>did not</i> detect the BootP request. Replace the LAN cables to the MSD Security ChemStation computer and the GC. Repeat the tests in this section.	

Check the MSD

If the cabling, computer, system integrity, and GC tests have been passed, proceed to check out the MSD.

To check the MSD

Step	Action	Notes
1	Test the MSD LAN hardware.	a b c d Power cycle the MSD. Examine the LEDs at the back of the instrument. Beneath the LAN RJ-45 cable, there are two LEDs: a power LED and a heartbeat LED. Is the Power LED on or off? - ON. Power and power cord are okay. - OFF. Power and power cord should be checked. Are they okay? - Yes. There is a hardware problem with the MSD. - No. Check circuit breaks and replace power cord as necessary. Is the heartbeat LED blinking? - Yes. Is it blinking on/off/on/off evenly? - Yes. The hardware is okay. - No. Report the blinking pattern to your service representative. - No. Flash memory has been corrupted or the LAN/MS control card is defective. Place service call.

To check the MSD (continued)

Step	Action	Notes
2 Test the LAN configuration (for use with non-6890N GCs).	a Cycle power to the MSD and wait 25 seconds to determine if Agilent BootP Service detected the BootP request. b If the BootP Service <i>did</i> detect the BootP request: Did the BootP request supply the correct IP address? • Yes. Can you ping the MSD? • Yes. The MSD is configured properly on the network. • No. The MSD could be controlled by another BootP server. Check network. • No. Add the new MAC address to the BootP Server; delete the old MAC address that had been assigned to that IP address. Now can you ping it? • Yes. The MSD is configured properly on the network. • No. Verify hardware connections. c If the BootP Service <i>did not detect</i> the BootP request. Replace the LAN cables to the ChemStation computer and the MSD. Repeat the tests in this section.	

Intermittent Problems

Intermittent problems are much more difficult to identify and solve. Executing the following commands from the Windows Command Prompt may help locate the problems.

If the networking configuration is working most of the time, probing the reliability and performance of the LAN by using ping can help with system diagnostics.

ping -t -w 1000 -n 1 -l 1024

-t = ping continuously until interrupted by Ctrl-C

-w 1000= 1000 millisecond timeout

-n 1= 1 packet per ping

-l 1023= 1024 byte packets

When this command is executed, you should see a continuous stream of packet returns. If you see occasional "timed out" messages, it indicates that something caused the packet not to be returned within the timeout period.

ipconfig /all

When this command is executed, you should see a series of network connections set up on the computer. This could be useful to help identify incorrectly entered IP Addresses (Subnet Masks, Gateways, and so forth).

Optionally, redirect the output to a text file on the root of the C:] drive.

ipconfig /all >C:\ipconfig.txt

Computer Loopback Test

When ping succeeds

If ping succeeds, it implies the device specified by the IP address in the MS Configuration program exists and basics of network communications are functional. What you learn if ping succeeds:

- The instrument exists
- The network drivers are installed correctly on the MSD Security ChemStation computer and on the device
- TCP/IP as a protocol is running and adequately configured on the MSD Security ChemStation computer and device
- LAN cables are good and no gateway, router, or switch is presenting any obvious problem
- Subnet masks are not presenting a problem

What you still do not know even if ping succeeds:

- If the selected device is a GC or an MSD
- If the device is ready to be controlled by an MSD Security ChemStation
- If the GC has the right firmware (note that ping is the only network diagnostic available for the GC)

When ping fails

If ping fails, it implies that something is fundamentally wrong and could be one or more of the following:

- Bad network card in the MSD Security ChemStation computer. If the network card is bad, there should be a message in the Event Viewer system log to indicate the problem.
- TCP/IP software is not installed (*Windows 2000 only*). Check **ControlPanel > Network and Dial-up Connections > Local Area Connection > Properties**. If TCP/IP is not there, it must be installed. Do not forget to reload Service Pack(s) after you change your network configuration.

- Bad LAN cables or connections. Physically inspect LAN cabling. Use a computer connected to the same hub if necessary. Change LAN cables with cables known to be good.
- One or more network device(s) is/are not powered up.
- For a non-6890N GC/MS system, perhaps its IP address was not received at the device, or it received the wrong IP address from a second BootP server. Make sure the appropriate BootP service is running. Power cycle the device to "restore" BootP service. Wait for the BootP server to receive the BootP request and issue the IP address. Use the logging feature to check this.
- The LAN card (GC) or LAN/MS Control card (MSD) has failed. For a GC card, consult the manufacturer. For the LAN/MS Control card, verify the bottom LED is on and that the next LED is blinking at 1 Hz. If it is blinking S-O-S, LAN/MS control card firmware needs to be updated. If it is not blinking after a power cycle, it is either defective or it did not receive its IP address.
- If the problem is NOT the MSD Security ChemStation software or SICL drivers, then it might be the Agilent BootP server

When ping fails, everything must be checked because the computer, the device, and/or the network could be at fault. The problem could be hardware, software, firmware, configuration, or the network. The most expedient approach is to restart the installation procedure. If your network has other computers with TCP/IP networking, try to ping the MSD Security ChemStation, the MSD, and the GC from one of the other computers.

Error Messages

Error message: Loopback @ 10.1.1.100 failed the Ping test.

Help message: Loopback Failure

This is a fundamental problem with TCP/IP networking protocol and generally means networking drivers are not correctly bound to the network card or that TCP/IP is not installed correctly. It could also mean the network card is defective or that there is an IRQ conflict.

Reinstall/reconfigure the system as an isolated LAN, then try again. If still bad, do the following:

- 1** Verify BIOS enables LAN.
- 2** Check the system log using the operating system Event Viewer for network errors (indicated in red).
- 3** Reinstall and reconfigure TCP/IP (*Windows 2000 only*) or reset the TCP/IP stack (*Windows XP only*).
- 4** Verify drivers.
- 5** Verify port (au1, 10baseT, and so forth).
- 6** Reinstall current Windows Service Pack(s).

Error message: GC @ www.xxx.yyy.zzz failed the Ping test.

Help message: Ping GC Failure (loopback has succeeded!)

Possible causes

- Incorrect IP address
- No physical connection
- GC powered down
- BootP service not up (non-6890N GCs)
- JetDirect card failure (non-6890N GCs)
- MSD Security ChemStation computer network card failure
- Bad cables

Solution

- 1 Run BootP service.
- 2 Verify IP and MAC addresses in BootP manager and leave Agilent BootP service up and running.
- 3 Turn the GC off, then on.
- 4 Wait 40 seconds for the GC to complete self test.
- 5 Verify the GC sent a BootP request and that BootP service delivered an IP address. Verify that GC MAC and IP addresses are consistent with the instrument configuration in the MS Configuration program.
- 6 Run the MS Configuration program and execute the Help/Check Networking item again.

If the problem persists, reinstall/reconfigure the system as an isolated LAN, then try again.

**Error Message: MS @ www.xxx.yyy.zzz failed the Ping test.
Help message: Ping MS Failure (loopback has succeeded!)
(Ping GC, if present, has succeeded)**

Possible causes

- Incorrect IP address
- No physical connection
- MSD powered down
- BootP service not up
- MSD LAN/MS Control card failure
- MSD Security ChemStation computer network card failure
- Bad cables

Solution

- 1 Run BootP service.
- 2 Verify IP and MAC addresses in BootP manager and leave Agilent BootP service up and running.

- 3** Reboot the MSD from the Local Control Panel (Controller/Reboot Controller).
- 4** Wait 25 seconds for the MSD to complete its bootup.
- 5** Verify that the MSD sent a BootP request and that BootP service delivered an IP address. Verify that MSD MAC and IP addresses are consistent with the instrument configuration in the MS Configuration program.
- 6** Run the MS Configuration program and execute the Help/Check Networking item again.

If the problem persists, reinstall/reconfigure the system as an isolated LAN, then try again.



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